

A-0014

Total Pages : 3

Roll No.

MSCBOT-506

M.Sc. Botany (MSCBOT)

(Cell Biology of Plants)

Examination, June 2025

Time : 2:00 Hrs.

Max. Marks : 70

Note :- This paper is of Seventy (70) marks divided into Two (02) Sections 'A' and 'B'. Attempt the questions contained in these Sections according to the detailed instructions given therein. *Candidates should limit their answers to the questions on the given answer sheet. No additional (B) answer sheet will be issued.*

Section-A

(Long Answer Type Questions) 2×19=38

Note :- Section 'A' contains Five (05) Long-answer type questions of Nineteen (19) marks each. Learners are required to answer any two (02) questions only.

1. Describe the structure of a eukaryotic chromosome and discuss the organisation of DNA and histone proteins with in a chromosome.
2. Draw a well labelled diagram of ultrastructure of plant cell and explain structure and function of any three cell organelles.
3. Describe structure, biogenesis and functions of ribosomes.
4. Write down explanatory note on any *two* of the following :
 - (a) Cell senescence.
 - (b) Lampbrush chromosome.
 - (c) Interphase of cell cycle.
5. Describe the ultrastructure of chloroplast. What are similarities and differences between chloroplast and mitochondria ?

Section–B

(Short Answer Type Questions) 4×8=32

Note :– Section ‘B’ contains Eight (08) Short-answer type questions of Eight (08) marks each. Learners are required to answer any *four* (04) questions only.

1. Briefly describe the structure and function of different components of nucleus.
2. Explain the term gene, genome, chromatid and chromosome.
3. Write short note on any *two* of the following :
 - (a) Biogenesis of mitochondria
 - (b) Cytokinesis
 - (c) Anaphase movements
4. Describe the structure and function of plant cell wall.
5. Discuss the role of peroxisome in photorespiration and glyoxylate cycle.
6. Explain the structure and functions of the Endoplasmic reticulum.
7. Differentiate between any two of the following :
 - (a) Prokaryotic and Eukaryotic cells.
 - (b) Centromere and telomere.
 - (c) Heterochromatin and euchromatin.
8. Explain the role of calcium calmodulin in plant cell signaling with suitable diagram.
